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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,925	08/31/2001	Robert J. Donald	44653A	2226

109 7590 01/29/2003

THE DOW CHEMICAL COMPANY
INTELLECTUAL PROPERTY SECTION
P. O. BOX 1967
MIDLAND, MI 48641-1967

EXAMINER

MULLIS, JEFFREY C

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 01/29/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-2

Office Action Summary	Application No.	Applicant(s)	
	09/943,925	DONALD ET AL.	
	Examiner	Art Unit	
	Jeffrey C. Mullis	1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 15-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> . | 6) <input type="checkbox"/> Other: _____ |

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Applicant's election of Group I as well as the species of other hydrogenated vinyl aromatic/conjugated diene block copolymer in claim 11 and butadiene containing block copolymers in Paper No. 9 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The specification as filed has no support in any preceding cases including those on which applicants claim benefit of priority except for 09/575,062. For at least the reason that applicants' number average molecular weights are not disclosed, mono or multilayer articles are not disclosed and applicants' ratio of diene/aromatic block is also not disclosed by any of the applications to which priority is claimed. Therefore the effective filing date of the instant case is the filing date of 09/575,062, namely 5-19-00.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 and 8-13 are rejected under 35 U.S.C. § 102(a) as being anticipated by Fujiwara et al. (JP 11-286526).

Fujiwara et al. disclose examples of completely hydrogenated styrene butadiene block copolymers which are formed into sheets (note applicants' specification at page 46 line 25 which indicates that sheets fall within applicants' definition of a monolayer structure). Note Example A5 of the patent on page 5 as well as page 12 lines 1-2 of the translation for SBS with 80% styrene, a styrene number average molecular weight block of 21,000 and an overall number average molecular weight of 71,000 (note that the translation contains substantial errors in the Table such that none of the entries in the Table on page 13 would appear to anticipate the claims but that the original Japanese patent document itself does indicate that Example A-5 does anticipate the claims). Note the Table in the translation on page 17 where it is indicated that the examples have an aromatic hydrogenation amount of at least 99.2%. Although the addition of additional polymer is not explicitly disclosed, no chemical reaction is 100% efficient and even a tiny amount of premature termination of the living styrene block prior to addition of butadiene would have resulted in generation of a small amount of polystyrene homopolymer such as would anticipate the claims given

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no lower limit on the amount of additional polymer is recited by the claims except for a single dependent claim which recites a very small amount of additional polymer.

Claims 3-7 and 10-14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujiwara et al., cited above in view of Ikematu (5,189,110) or Hoeg (USP 3,598,886).

The primary reference does not disclose the addition of compatibilizers and possibly it is not true that additional polymers in the form a polystyrene butadiene diblock copolymer is inherently present in the block copolymer compositions of the primary reference.

Hoeg et al. disclose that hydrogenated styrene butadiene block copolymers in which the aromatic block has been hydrogenated are excellent bonding agents and are compatible with homopolyvinyl cyclohexane or polymers containing polyvinyl cyclohexane and that such blends have excellent properties including outstanding impact strengths at column 3 lines 7-14.

Ikematu et al. disclose that aromatic block hydrogenated styrene butadiene block copolymers may be blended with other block copolymers at column 10 lines 32-63. Note also that patentees disclose that only an A block may be formed during the preparation of styrene butadiene styrene block copolymers at column 9 lines 55-65.

It would have been obvious to a practitioner having ordinary skill in the art at the time of the invention to blend other copolymers with the block copolymers of the primary reference and with respect specifically to Hoeg it would have been obvious to a practitioner having ordinary skill in the art at the time of the invention to blend polyvinyl cyclohexane given that Hoeg et al. specifically disclose that blending a polyvinyl cyclohexane results in compositions having outstanding impact strength absent any showing of surprising or unexpected results and in the expectation of increasing the impact strength of the primary reference.

It would have been obvious to a practitioner having ordinary skill in the art at the time of the invention to blend other copolymers with the composition of the primary reference as taught by Ikematu et al. since in the expectation of lowering the cost or manipulating properties since block copolymers produced by styrene butadiene polymerization and the presence of butyl lithium are not known to be amongst the cheapest polymers commercially available and further given that the primary reference discloses that hydrogenation should take place which is an additional process step not necessary for many polymers and in the expectation of lowering cost and/or improving properties absent any showing of surprising or unexpected results.

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With regard to the addition of compatibilizers, it was widely known at the time of the invention to add compatibilizers to compositions of polymeric blends in order to compatibilize the blend since blends which are not compatible have inferior properties and therefore it would have been obvious to a practitioner having ordinary skill in the art at the time of the invention to add compatibilizers to the primary reference in order to achieve better compatibility absent any showing of surprising or unexpected results.

Claims 1-14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hoeg et al. (USP 3,598,886).

Hoeg et al. disclose styrene butadiene styrene block copolymers having applicants' level of aromatic block prior to hydrogenation. Note Examples 72-87 in Table 2 in column 8 in this regard. Note that explicit amounts of butyl lithium and styrene/butadiene are disclosed such that a number average molecular weight of approximately 45,000 for these examples may be calculated. The material is essentially completely hydrogenated at column 15 lines 50-55. The material may be blended with polyvinyl cyclohexane in order to produce a product having high impact strength at column 3 lines 5-14 and may be used as a wire coating of a film (i.e. monolayer) at column 3 lines 5-7. While the number average molecular weights after hydrogenation are not disclosed, patentees' calculated number

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average molecular weights prior to hydrogenation are significantly above applicants' lower number average molecular weights, those of ordinary skill would therefore assume that the molecular weights after hydrogenation are within the metes and bounds of the molecular weights of the claims.

There are no specific examples of wire coatings or films or blend compositions of the specific examples cited above. However it would have been obvious to a practitioner having ordinary skill in the art at the time of the invention to produce polyvinyl cyclohexane containing blends with Examples 72-87 or other examples in patentees' specification or to form films since patentees specifically disclose that this may be done absent any showing of surprising or unexpected results.

Although no compatibilizers are disclosed, it would have been obvious to a practitioner having ordinary skill in the art at the time of the invention to add compatibilizers to the composition of Hoeg et al. given that it was widely known at the time of the invention that compatibilizers increase the compatibility of blends and increase mechanical properties due to increased compatibility absent any showing of surprising or unexpected results.

Claims 1-6 and 8-13 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kato (JP 2586575).

Kato's Example 2 on page 14 of the translation discloses a block copolymer of SBS in which the styrene blocks are hydrogenated and which has a number average molecular weight of 60,000 and 5% butadiene (i.e. 95% styrene). Note that the material is converted into a "disc", which embraces applicants' monolayer. Although additional polymer addition is not disclosed, Example 2 clearly discloses that the material is made by anionic polymerization. Hence it would be expected that a minor amount of homopolystyrene would be present in the material due to termination of the styrene block prior to production of the butadiene block.

Claims 3-6 and 8-13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kato, cited above.

Arguably, Kato's composition may not contain an additional polymer. However since Kato discloses that homopolyvinyl cyclohexane may be used as well as block copolymer, the combination of block copolymer and homopolyvinyl cyclohexane would have been obvious to a practitioner having ordinary skill in the art at the time of the invention in the expectation that such a combination would function as well as homopolyvinyl cyclohexane or the block copolymer of the Examples absent any showing of surprising or unexpected results.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by

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the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Hahnfeld (any one of us patents 6451924 or 6376621 or 6426390 or 6350820).

The applied reference has a common assignee and inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

All patents disclose applicants hydrogenated block copolymers. Note for instance column 1 line 45-col. 2 line 11 of '621 , '924 and '820 as well as well as columns 8 and 9 for

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layered articles. Note also col 1, lines 35-60 and col. 8, 14-15 of '390.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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Claims 1-14 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over all claims of U.S. Patent No. 6451924 or 6376621 or 6426390 or 6350820 . Although the conflicting claims are not identical, they are not patentably distinct from each other because it was widely known in the art to form sheets and films from macromolecular materials to increase the value of such compositions and furthermore optical media disks embrace layered articles and conversion to layers would have therefore been obvious to a practitioner to increase the value of the claimed compositions or to form optical media disks.

Applicants' Novel Heat Resistant Plastics From Hydrogenation of Styrene Polymers reference has not been considered since the date, journal of publication, author, etc. are not present on the IDS, nor has the article been submitted in its entirety. Note MPEP § 609 in this regard.

Any inquiry concerning this communication should be directed to Jeffrey Mullis at telephone number (703) 308-2820.

J. Mullis:cdc

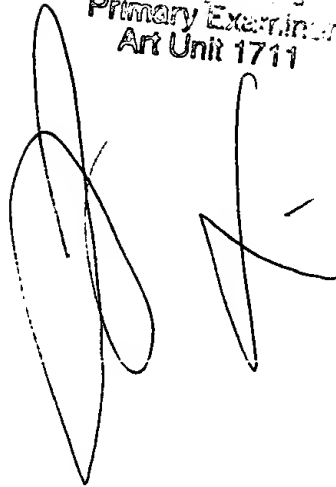
Serial No. 09/943,925

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January 22, 2003

Primary Examiner
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A handwritten signature in black ink, consisting of a large, stylized 'S' or 'L' shape followed by a smaller, more complex flourish.